USGS Science Support Partnership with the USFWS
Final Update, FY14

PI: Stephanie S. Romañach
Field technician: Julia P. Chapman
Project title: Identification of previously undocumented Florida Grasshopper Sparrow (FGSP), *Ammodramus savannarum floridanus*, occurrences on public and private lands, and confirmation of the current population status and distribution
BASIS+ project: BB00EH8, Task 15.5
Project period: October 1 2012 – September 30 2014
Reporting period: October 1 2013 – September 30 2014

In March of 2014, the second season began of this two-season (spring 2013 and 2014) effort to survey for Florida Grasshopper Sparrows (FGSP) at Kissimmee Prairie Preserve State Park (KPPSP). We conducted surveys at KPPSP during the breeding season, April – July. Survey methodology training was provided by KPPSP Biologist, Paul Miller, who has been conducting FGSP surveys for 13 years. Many individuals from various groups, including USFWS, were trained during the first week of April. Each trained individual was guided in learning the unique call of the FGSP until they felt confident in reliably identifying sparrows.

A total of 1,308 survey points covering the entirety of the prairie were generated by Paul Miller. These points were then evaluated to determine areas of high priority for surveying (Figure 1). Factors for deciding priority regions were based on (1) historical presence of male FGSP occupancy, (2) habitat suitability- including appropriate burn intervals, and (3) site accessibility. Official surveys began during the second week of April, and continued until high rainfall restricted the access to survey sites.

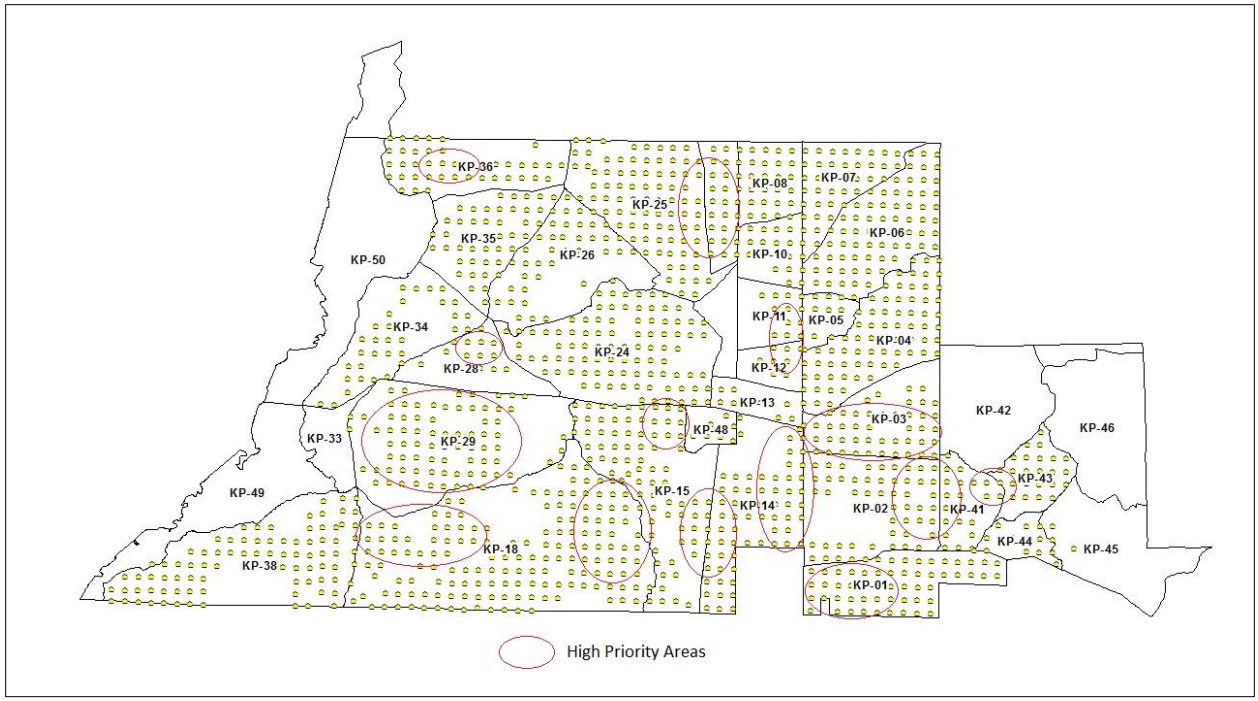
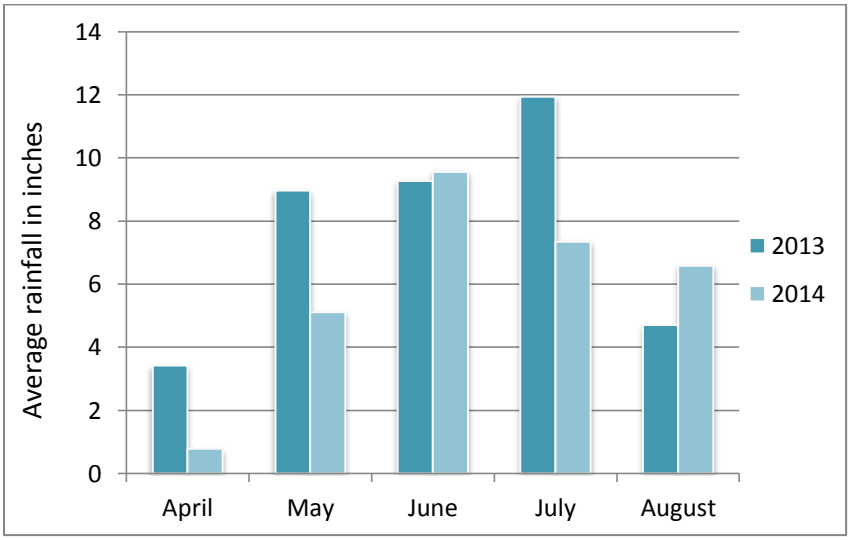


Figure 1. Map of Kissimmee Prairie Preserve State Park. Small dots represent the possible 1,308 survey points. Red circles indicate priority regions for FGSP surveys.

Rainfall data were collected each day from gauges throughout the prairie. Summer rainfall was above average, which may have affected reproductive success for the ground-nesting FGSP (Figures 2, Table1). The previous year, 2013, also had an abnormally wet year at KPPSP due to heavy rains from Tropical Storm Andrea.



Figures 2. Comparisons of the 2013 and 2014 survey seasons average monthly rainfalls.

Five-minute point counts were conducted at 395 of the survey points (of the possible 1,308 survey points) throughout the prairie. These encompassed nearly 75% of the regions deemed as high priority. Surveys included three minutes of actively looking and listening for FGSP, followed by one minute of male song playback, and ending in one minute of looking and listening. Detections were recorded on data sheets, including locations of each FGSP based on estimated distance and bearing from point center on an aerial map. Information on birds recorded included aural and/or visual detection, chipping, countersinging, and movement. Bachman's sparrows were also recorded for ongoing data regarding similar habitat selection and needs by both sparrow species.

A total of 23 FGSP detections were made, with 16 being singing males. However, with most detections occurring in while the migratory Eastern grasshopper sparrow (*Ammodramus savannarum pratensis*) is also present on KPPSP, it is difficult to confirm whether these detections were FGSP or the Eastern subspecies. Surveys in the 2014 season resulted in fewer detections than 2013 (Figures 3; Table 1).

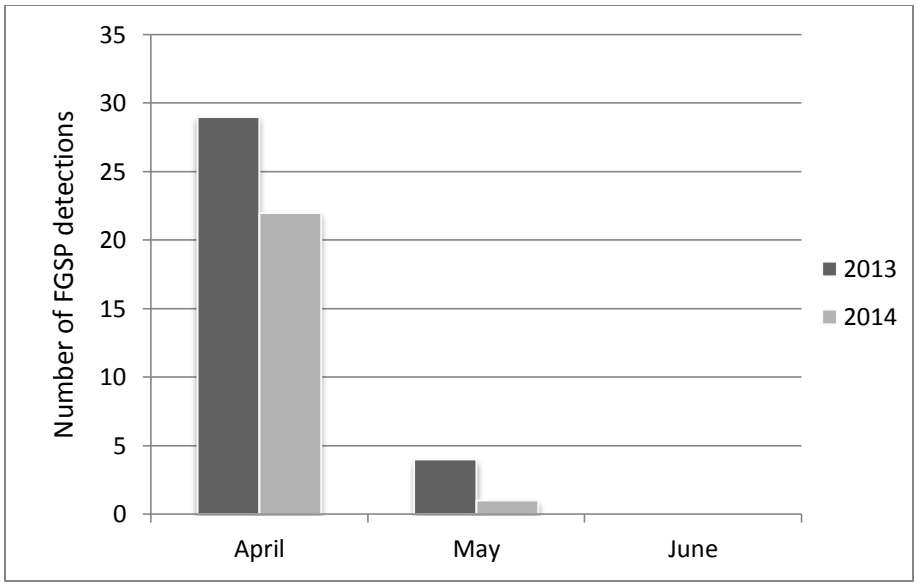


Figure 3. Number of FGSP detections during the 2013 and 2014.

FGSP Detections		
Zone Number	2013	2014
Zone 2	18	0
Zone 14	8	3
Zone 15	1	0
Zone 18	1	3
Zone 29	2	16
Zone 41	3	0
Zone 38	0	1

Table 1. Detections compared by zone in 2013 and 2014 at KPPSP.

Two sites with positive FGSP detections were revisited to confirm FGSP presence (compared to 13 revisited in 2013); however, FGSPs were not detected on any of these repeat visits. With minimal staff to assist with surveys and KPPSP covering such a large area, it was extremely difficult to survey the extent of the entire preserve.

In Year 2 of this project (2014), a new, isolated population of FGSP was discovered on a privately-owned ranch bordering KPPSP's northeastern corner. The FGSP population on the ranch was actively breeding and successfully rearing young during the 2014 breeding season. Led by USFWS employees, the ranch was surveyed and a total of 26 FGSP detections were made. Subsequently, 22 FGSPs (male, female, and juvenile) were banded.

Given the proximity of KPPSP's northeastern pasture to the private lands population, efforts late in the season were focused on surveying areas within KPPSP's pasture that had similar habitat to the private lands (Figure 4). No FGSP detections were made within the pasture area on KPPSP. The lack of FGSP detections may be because the area had gone too long without proper habitat management resulting in

large-scale woody encroachment, which makes the habitat unsuitable to FGSP. If habitats are managed for dry prairie then the potential for FGSP occupancy may increase.

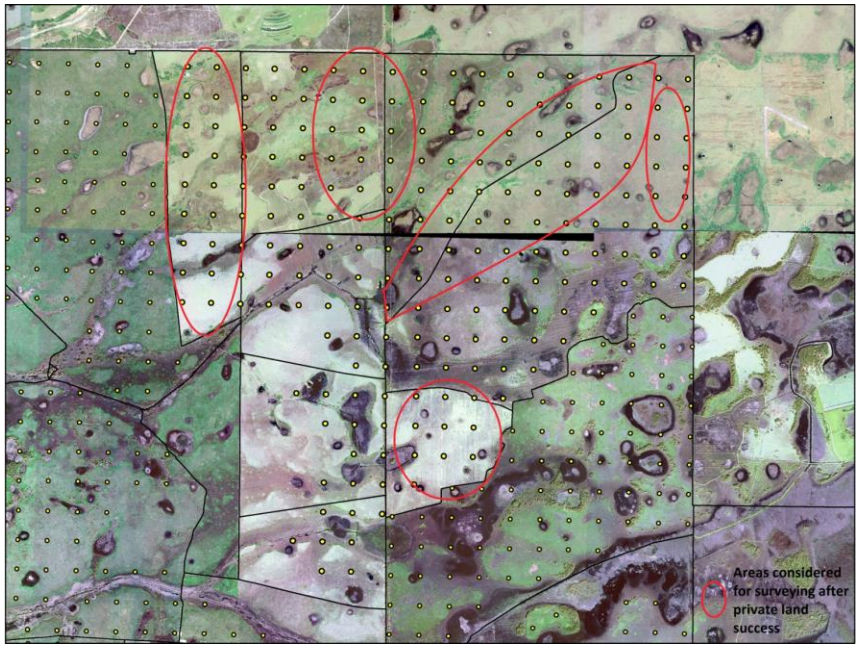


Figure 4. Areas described as potentially good FGSP habitat in the northeastern corner of KPPSP based on presence of FGSP on private lands

In conclusion, very few FGSP detections were made in the areas of KPPSP that were historically occupied. Additionally, our detections could overestimate the FGSP population on KPPSP if the Eastern subspecies is being falsely recorded as FGSP. Comprehensive vegetation survey data are crucial to accurately assess habitat selection across the dry prairie landscape. Implementing a fire regime that results in proper habitats for use by FGSP could increase the probability of FGSP re-occupying the landscape. Hydrologic data would also be valuable to determine fine scale variation in ponding and draining through the landscape to shape which areas could potentially be more suitable for FGSP nesting. A fine-scale habitat model for Central Florida would help identify new private lands and other areas (even within public lands) to search for the FGSP. To properly survey any new areas identified by a habitat model in addition to the public lands currently surveyed, including KPPSP, a dedicated field crew would be needed to cover these large areas within the small seasonal window for FGSP detection.